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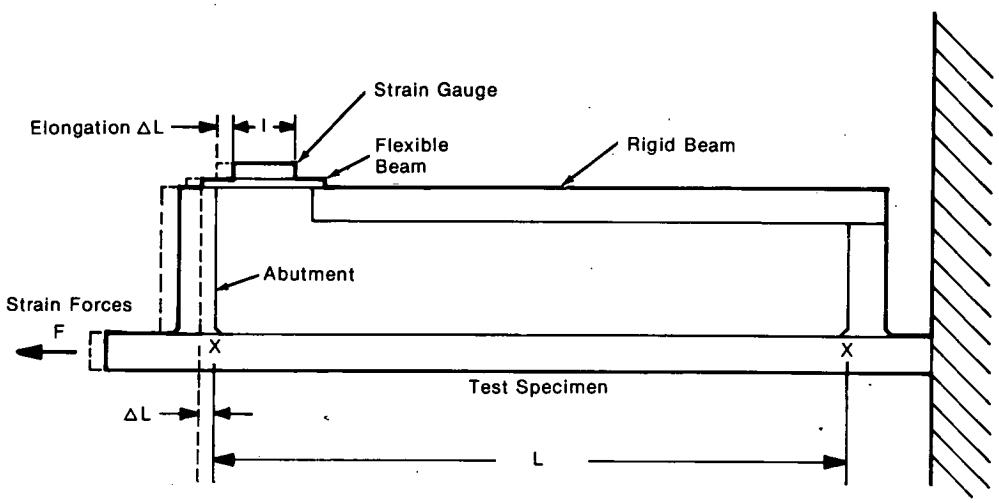
Strain Gauge Sensitivity Improved by Using a Composite Beam



Strain Gauge Mounted On A Composite Beam

The problem:

Typical strain gauges have relatively low electrical outputs. Noise masks the signal when small strains are measured.

The solution:

A composite beam connected to a strain gauge and mounted on a test specimen is capable of amplifying small strains by a factor of 10.

How it's done:

As shown in the illustration, a strain gauge is mounted on a flexible beam. The flexible beam in turn is secured between an abutment and a rigid beam. The flexible beam is easily removed for replacement or calibration. This arrangement is much more sensitive to test specimen elongation than is the standard method of placing the gauge on the specimen.

In operation, strain forces F cause ΔL elongation or compression in the test specimen. Tests indicate that the resulting output can be 10 times greater than in the standard method.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
NASA Pasadena Office
4800 Oak Grove Drive
Pasadena, California 91103
Reference: TSP74-10297

(continued overleaf)

Patent status:

This invention is owned by NASA, and a patent application has been filed. Inquiries concerning nonexclusive or exclusive license for its commercial development should be addressed to:

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